

MTS-710

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Y. Goto et al. : Art Unit:
Serial No.: To Be Assigned : Examiner:
Filed: Herewith :
FOR: AN OPTICAL DISK, AN OPTICAL :
DISK BARCODE FORMING METHOD, AN :
OPTICAL DISK REPRODUCTION
APPARATUS, A MARKING FORMING
APPARATUS, A METHOD OF FORMING
A LASER MARKING ON AN OPTICAL
DISK, AND A METHOD OF
MANUFACTURING AN OPTICAL DISK

COPY

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231
S I R :

Prior to examination, please amend the above-identified application as follows.

IN THE DRAWINGS:

Please approve the corrections to the drawings submitted in the enclosed red inked sketch under cover of a letter to the official draftsman. Fig. 3 has been amended to correct a typographical error. Figs. 6, 7 and 30 have been amended to substitute English language labels for Japanese language labels.

IN THE SPECIFICATION:

On page 3, lines 20-21, delete "being used when encrypting prescribed data for transmission" and insert therefor --is used to encrypt prescribed data, and the encrypted prescribed data is transmitted--.

On page 5, line 7, delete "main data".

On page 5, line 10, after "area" insert --other--.

On page 5, line 10, delete "main data".

On page 5, line 14, delete "main data".

On page 5, second line from the bottom, delete "said" and insert therefor --a--.

On page 6, line 13, after "barcode," insert --said different recording area is also such area to which contents are recorded with pits,--.

On page 6, line 16, after "pits" insert --which are formed in said different recording area--.

On page 11, sixth line from the bottom, after "CLV," insert --and--.

On page 11, sixth line from the bottom, delete "being" and insert therefor --is--.

On page 17, line 9, delete "dada" and insert therefor --data--.

On page 79, bottom line, delete "49(a)" and insert therefor --14(a)--.

On page 80, line 3, delete "49(a)" and insert therefor --14(a)--.

On page 80, line 5, delete "49(b)" and insert therefor --14(b)--.

On page 80, line 9, delete "49(c) and 49(d)" and insert therefor --14(c) and 14(d)--.

On page 80, line 18, delete "49(c) and 49(d)" and insert therefor --14(c) and 14(d)--.

On page 81, line 17, delete "49(c) and 49(d)" and insert therefor --14(c) and 14(d)--.

On page 81, line 18, after "0s" insert --, as shown in Figure 14(b)--.

IN THE CLAIMS:

Please amend claims 6, 14, 17, 20 and 33 as follows:

1 6. (Amended) An optical disk according to claim 5, wherein
2 said barcode contains data including, in addition to said ID information, a
3 public key of a public key encryption function corresponding to said ID
4 information, said public key [being] is used [when encrypting] to encrypt
5 prescribed data, and the encrypted prescribed data is transmitted [for
6 transmission] to an external party in order to obtain from said external party
7 a password required to reproduce said optical disk.

1 14. (Amended) An optical disk reproduction apparatus
2 wherein recorded contents of a [main data] recording area, recorded by
3 forming pits on an optical disk, are reproduced by using a rotational phase
4 control for a motor, while recorded contents of a different recording area
5 other than said [main data] recording area, recorded by selectively forming

6 low-reflectivity portions on a reflective film in said different recording area,
7 are reproduced by using rotational speed control for said motor, and
8 the recorded contents of said [main data] recording area and the
9 recorded contents of said different recording area are both reproduced by
10 using the same optical pickup.

1 17. (Amended) An optical disk reproduction apparatus
2 according to claim 16, wherein said rotational speed is [the] a rotational
3 speed that would be achieved in said different recording area if said rotational
4 phase control were applied.

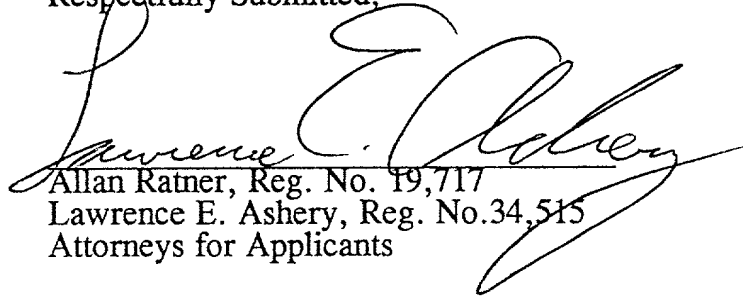
1 20. (Amended) An optical disk reproduction apparatus
2 according to claim 14, wherein
3 said low-reflectivity portions are a barcode, said different
4 recording area is also such area to which contents are recorded with pits, and
5 when reproducing the recorded contents of said different
6 recording area, a high-frequency-component signal generated during
7 reproduction of said pits which are formed in said different recording area is
8 reduced or eliminated by a low-pass filter, thereby making it possible to
9 separate a signal which is reproduced from said barcode.

1 33. (Amended) A method of manufacturing a disk, comprising
2 the steps of:
3 forming at least one disk;
4 forming a reflective film to said formed disk;
5 applying at least one marking to said reflective film;
6 detecting at least one position of said marking; and
7 encrypting said detected position information and writing said
8 encrypted information onto said disk,
9 wherein, when encrypting and writing, at least said encrypted
10 information is converted into a barcode, and said barcode is written by

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- 11 eselectively removing said reflective film on said disk on which data is
12 recorded with CLV, and
13 all or part of said barcode [being] is written in overwriting
14 fashion to a prescribed region of a pre-pit signal area on said disk.

Respectfully Submitted,


Allan Ratner, Reg. No. 19,717
Lawrence E. Ashery, Reg. No. 34,515
Attorneys for Applicants

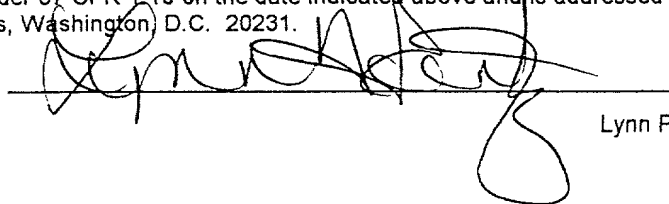
JMW/ljs

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Valley Forge, PA 19482
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Lynn Pentz

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Y. Gotoh et al. : Art Unit:
 Serial No.: To Be Assigned : Examiner:
 Filed: Herewith :
 FOR: AN OPTICAL DISK, AN OPTICAL DISK BARCODE :
 FORMING METHOD, AN OPTICAL DISK :
 REPRODUCTION APPARATUS, A MARKING :
 FORMING APPARATUS, A METHOD OF :
 FORMING A LASER MARKING ON AN OPTICAL :
 DISK, AND A METHOD OF MANUFACTURING :
 AN OPTICAL DISK :

CONTINUATION APPLICATION OF:

Applicant: Y. Gotoh et al. : Art Unit: 2132
 Serial No.: 09/595,139 : Examiner: S. Kabakoff
 Filed: June 15, 2000 :
 FOR: AN OPTICAL DISK, AN OPTICAL DISK BARCODE :
 FORMING METHOD, AN OPTICAL DISK :
 REPRODUCTION APPARATUS, A MARKING :
 FORMING APPARATUS, A METHOD OF :
 FORMING A LASER MARKING ON AN OPTICAL :
 DISK, AND A METHOD OF MANUFACTURING :
 AN OPTICAL DISK :

SUPPLEMENTAL PRELIMINARY AMENDMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

S I R :

Prior to examination, please further amend the above application as follows:

IN THE SPECIFICATION:

Please insert the following paragraph at page 1, line 7:

CROSS-RELATED APPLICATIONS

This application is a Continuation application of U.S. Patent Application Serial No. 09/595,139, filed June 15, 2000, which is a Continuation application of U.S. Patent Application Serial No. 09/441,338, filed November 16, 1999, which is now U.S. Patent No. 6,141,419, issued October 31, 2000.

Please replace the paragraph beginning at page 2, line 20:

One aspect of the invention is an optical disk on which data is recorded with CLV, wherein, in a prescribed region of a pre-pit signal area on said disk, all or part of a barcode is written in overwriting fashion by selectively removing a reflective film in said prescribed region.

Please replace the paragraph beginning at page 3, line 1:

Another aspect of the invention is an optical disk, wherein a control data area is provided for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph beginning at page 3, line 6:

Still another aspect of the invention is an optical disk, wherein a guard-band area where no data is recorded is provided between said control data area and said prescribed region of said pre-pit signal area.

Please replace the paragraph beginning at page 3, line 10:

Yet another aspect of the invention is an optical disk, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Please replace the paragraph beginning at page 3, line 13:

Still yet another aspect of the invention is an optical disk, wherein said barcode contains data at least including ID information uniquely given to said optical disk.

Please replace the paragraph beginning a page 3, line 16:

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A further aspect of the invention is an optical disk, wherein said barcode contains data including, in addition to said ID information, a public key of a public key encryption function corresponding to said ID information, said public key being used when encrypting prescribed data for transmission to an external party in order to obtain from said external party a password required to reproduce said optical disk.

Please replace the paragraph beginning at page 3, line 24:

A still further aspect of the invention is an optical disk, wherein said ID information is encrypted or applied a digital signature to.

Please replace the paragraph beginning at page 4, line 2:

A yet further aspect of the invention is an optical disk, wherein a secret key of a public key encryption function is used when applying encryption or a digital signature to said ID information.

Please replace the paragraph beginning at page 4, line 6:

A still yet further aspect of the invention is an optical disk, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph beginning at page 4, line 9

One aspect of the invention is an optical disk barcode forming method wherein pulsed laser light from a light source is made into a rectangular beam pattern by using a rectangular mask and said rectangular beam pattern is focused on a reflective film in a pre-pit signal region in a prescribed radius portion of an optical disk on which data is recorded, and at the same time, said optical disk is rotated, thereby forming a plurality of rectangular reflective-film-removed regions as a barcode in the same radius portion on said reflective film.

Please replace the paragraph beginning at page 4, line 18:

Another aspect of the invention is an optical disk barcode forming method, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph beginning at page 4, line 24:

Still another aspect of the invention is an optical disk barcode forming method, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Please replace the paragraph beginning at page 5, line 3:

Yet another aspect of the invention is an optical disk barcode forming method, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph beginning at page 5, line 6:

Still yet another aspect of the invention is an optical disk reproduction apparatus wherein recorded contents of a main data recording area, recorded by forming pits on an optical disk, are reproduced by using a rotational phase control for a motor, while recorded contents of a different recording area than said main data recording area, recorded by selectively forming low-reflectivity portions on a reflective film in said different recording area, are reproduced by using rotational speed control for said motor, and

Please replace the paragraph beginning at page 5, line 17:

A further aspect of the invention is an optical disk reproduction apparatus, wherein tracking control is not performed in said different recording area.

Please replace the paragraph beginning at page 5, line 20:

A still further aspect of the invention is an optical disk reproduction apparatus, wherein tracking control is, in effect, performed in said different recording area.

Please replace the paragraph beginning at page 5, line 23:

A yet further aspect of the invention is an optical disk reproduction apparatus, wherein a rotational speed is the rotational speed that would be achieved in said different recording area is said rotational phase control were applied.

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Please replace the paragraph beginning at page 6, line 2:

A still further aspect of the invention is an optical disk reproduction apparatus, wherein the rotational speed of said motor in aid rotational speed control is maintained at a prescribed value based on a result obtained by measuring a minimum-length pit in said different recording area.

Please replace the paragraph beginning at page 6, line 7:

A yet further aspect of the invention is an optical disk reproduction apparatus, wherein said low-reflectivity portions are a barcode formed by selectively removing said reflective film.

Please replace the section beginning at page 6, line 11:

A still yet further aspect of the invention is an optical disk reproduction apparatus wherein

Please replace the section beginning at page 6, line 19:

One aspect of the invention is an optical disk reproduction apparatus, wherein

Please replace the paragraph beginning at page 7, line 1:

Another aspect of the invention is an optical disk reproduction apparatus, wherein said optical disk is constructed from two disk-substrates laminated together.

Please replace the paragraph beginning at page 7, line 4:

Still another aspect of the invention is an optical disk reproduction apparatus, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Please replace the paragraph beginning at page 7, line 10:

Yet another aspect of the invention is an optical disk reproduction apparatus, wherein, after reading recorded contents of said control data area and judging the presence or absence of said

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barcode, it is determined whether an optical pickup should be moved to an inner portion or an outer portion of said optical disk.

Please replace the section beginning at page 7, line 16:

Still yet another aspect of the invention is a marking forming apparatus which comprises:

Please replace the paragraph beginning at page 8, line 6:

A further aspect of the invention is a marking forming apparatus, wherein said disk is constructed from two disk-substrates laminated together.

Please replace the paragraph beginning at page 8, line 9:

A still further aspect of the invention is a marking forming means, wherein said position information writing means includes encrypting means for encrypting at least said detected position information or information concerning said position information, and writes contents thus encrypted to said disk.

Please replace the paragraph beginning at page 8, line 15:

A yet further aspect of the invention is a marking forming apparatus, wherein said position information writing means includes digital signature means for applying a digital signature to at least said detected position information or information concerning said position information.

Please replace the section beginning at page 8, line 24:

A still yet further aspect of the invention is a reproduction apparatus which comprises:

Please replace the paragraph beginning at page 9, line 20:

One aspect of the invention is a reproduction apparatus according, wherein at least said detected position information or information concerning said position information is written to said disk by position information writing means.

Please replace the section beginning at page 9, line 24:

20040420 "T069900"

Another aspect of the invention is a reproduction apparatus, wherein

Please replace the section beginning at page 10, line 9:

Still another aspect of the invention is a reproduction apparatus, wherein:

Please replace the section beginning at page 11, line 8:

Yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Please replace the section beginning at page 11, line 23:

Still yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Please replace the paragraph beginning at page 12, line 13:

A further aspect of the invention is a disk wherein a marking is formed by a laser to reflective film of said disk holding data written thereon, at least position information of said marking or information concerning said position information is encrypted or applied a digital signature, at least said encrypted information or digital signature-appended information is converted into a barcode, and said barcode is written by selectively removing said reflective film on said disk on which data is recorded with CLV, all or part of said barcode being written in overwriting fashion to a prescribed region of a pre-pit signal area on said disk.

IN THE CLAIMS:

Please cancel claims 1-35.

Please add the following new claims:

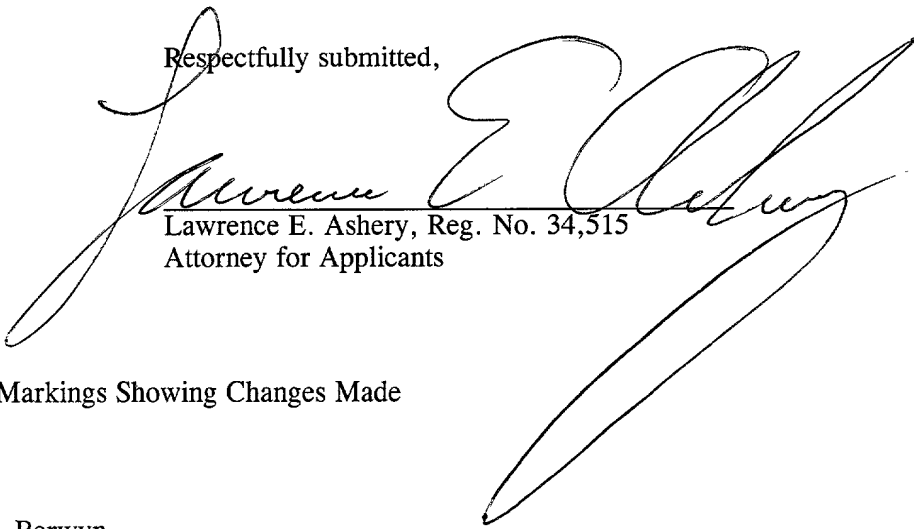
- 1 36. (Newly Added) An optical disk, comprising:
- 2 a barcode like mark;

an identifier for indicating whether or not said barcode light mark is present on said optical disk, and

said barcode like mark including a plurality of bars, each of said bars extending in a radial direction.

37. (Newly Added) An optical disk according to claim 36, wherein
an identifier which indicates whether the barcode-like marks are present or not, is provided in the control data area of information recording area.

Respectfully submitted,


Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

LEA/fp
Enclosure: Version With Markings Showing Changes Made

Dated: February 4, 2002

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Date of Deposit: February 4, 2002

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KATHLEEN LIBBY

VERSION WITH MARKINGS SHOWING CHANGES MADESPECIFICATION:

Specification at page 1, line 7:

CROSS-RELATED APPLICATIONS

This application is a Continuation application of U.S. Patent Application Serial No. 09/595,139, filed June 15, 2000, which is a Continuation application of U.S. Patent Application Serial No. 09/441,338, filed November 16, 1999, which is now U.S. Patent No. 6,141,419, issued October 31, 2000.

Specification at page 2, line 20:

~~The first~~ One aspect of the invention is an optical disk on which data is recorded with CLV, wherein, in a prescribed region of a pre-pit signal area on said disk, all or part of a barcode is written in overwriting fashion by selectively removing a reflective film in said prescribed region.

Specification at page 3, line 1:

~~The second~~ Another aspect of the invention is an optical disk ~~according to the first invention~~, wherein a control data area is provided for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Specification at page 3, line 6:

~~The third~~ Still another aspect of the invention is an optical disk ~~according to the second invention~~, wherein a guard-band area where no data is recorded is provided between said control data area and said prescribed region of said pre-pit signal area.

Specification at page 3, line 10:

~~The 4th~~ Yet another aspect of the invention is an optical disk ~~according to the first invention~~, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Specification at page 3, line 13:

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~~The 5th-Still yet another aspect of the invention is an optical disk according to the first invention,~~ wherein said barcode contains data at least including ID information uniquely given to said optical disk.

Specification a page 3, line 16:

~~The 6th-A further aspect of the invention is an optical disk according to the 5th invention,~~ wherein said barcode contains data including, in addition to said ID information, a public key of a public key encryption function corresponding to said ID information, said public key being used when encrypting prescribed data for transmission to an external party in order to obtain from said external party a password required to reproduce said optical disk.

Specification at page 3, line 24:

~~The 7th-A still further aspect of the invention is an optical disk according to the 5th invention,~~ wherein said ID information is encrypted or applied a digital signature to.

Specification at page 4, line 2:

~~The 8th-A yet further aspect of the invention is an optical disk according to the 7th invention,~~ wherein a secret key of a public key encryption function is used when applying encryption or a digital signature to said ID information.

Specification at page 4, line 6:

~~The 9th-A still yet further aspect of the invention is an optical disk according to any one of inventions from first to 8th,~~ wherein said optical disk is constructed from two disk-substrates laminated together.

Specification at page 4, line 9

~~The 10th-One aspect of the invention is an optical disk barcode forming method wherein~~ pulsed laser light from a light source is made into a rectangular beam pattern by using a rectangular mask and said rectangular beam pattern is focused on a reflective film in a pre-pit signal region in a prescribed radius portion of an optical disk on which data is recorded, and at the same time, said optical disk is rotated, thereby forming a plurality of rectangular reflective-film-removed regions as a barcode in the same radius portion on said reflective film.

Specification at page 4, line 18:

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~~The 11th~~ Another aspect of the invention is an optical disk barcode forming method according to ~~the 10th invention~~, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

Specification at page 4, line 24:

~~The 12th~~ Still another aspect of the invention is an optical disk barcode forming method according to ~~the 11th invention~~, wherein said barcode is formed in such a manner that two or more barcode signals cannot occur within one prescribed time slot.

Specification at page 5, line 3:

~~The 13th~~ Yet another aspect of the invention is an optical disk barcode forming method according to ~~any one of inventions from 10th to 12th~~, wherein said optical disk is constructed from two disk-substrates laminated together.

Specification at page 5, line 6:

~~The 14th~~ Still yet another aspect of the invention is an optical disk reproduction apparatus wherein recorded contents of a main data recording area, recorded by forming pits on an optical disk, are reproduced by using a rotational phase control for a motor, while recorded contents of a different recording area than said main data recording area, recorded by selectively forming low-reflectivity portions on a reflective film in said different recording area, are reproduced by using rotational speed control for said motor, and

Specification at page 5, line 17:

~~The 15th~~ A further aspect of the invention is an optical disk reproduction apparatus according to ~~the 14th invention~~, wherein tracking control is not performed in said different recording area.

Specification at page 5, line 20:

~~The 16th~~ A still further aspect of the invention is an optical disk reproduction apparatus according to ~~the 14th invention~~, wherein tracking control is, in effect, performed in said different recording area.

Specification at page 5, line 23:

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~~The 17th-A~~ yet further aspect of the invention is an optical disk reproduction apparatus according to the ~~16th invention~~, wherein said ~~a~~ rotational speed is the rotational speed that would be achieved in said different recording area is said rotational phase control were applied.

Specification at page 6, line 2:

~~The 18th-A~~ still further aspect of the invention is an optical disk reproduction apparatus according to the ~~14th invention~~, wherein the rotational speed of said motor in aid rotational speed control is maintained at a prescribed value based on a result obtained by measuring a minimum-length pit in said different recording area.

Specification at page 6, line 7:

~~The 19th-A~~ yet further aspect of the invention is an optical disk reproduction apparatus according to the ~~14th invention~~, wherein said low-reflectivity portions are a barcode formed by selectively removing said reflective film.

Specification at page 6, line 11:

~~The 20th-A~~ still yet further aspect of the invention is an optical disk reproduction apparatus according to the ~~14th invention~~ wherein

Specification at page 6, line 19:

~~The 21st~~ One aspect of the invention is an optical disk reproduction apparatus according to the ~~14th invention~~, wherein

Specification at page 7, line 1:

~~The 22nd~~ Another aspect of the invention is an optical disk reproduction apparatus according to any one of inventions from ~~14th to 21st~~, wherein said optical disk is constructed from two disk-substrates laminated together.

Specification at page 7, line 4:

~~The 23rd~~ Still another aspect of the invention is an optical disk reproduction apparatus according to the ~~14th invention~~, wherein said optical disk includes a control data area for holding therein physical feature information concerning said optical disk, and an identifier for indicating the presence or absence of said barcode is recorded in said control data area.

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Specification at page 7, line 10:

~~The 24th-~~ Yet another aspect of the invention is an optical disk reproduction apparatus according to ~~claim 23~~, wherein, after reading recorded contents of said control data area and judging the presence or absence of said barcode, it is determined whether an optical pickup should be moved to an inner portion or an outer portion of said optical disk.

Specification at page 7, line 16:

~~The 25th-~~ Still yet another aspect of the invention is a marking forming apparatus which comprises:

Specification at page 8, line 6:

~~The 26th-~~ A further aspect of the invention is a marking forming apparatus ~~according to the 25th invention~~, wherein said disk is constructed from two disk-substrates laminated together.

Specification at page 8, line 9:

~~The 27th-~~ A still further aspect of the invention is a marking forming means ~~according to the 25th invention~~, wherein said position information writing means includes encrypting means for encrypting at least said detected position information or information concerning said position information, and writes contents thus encrypted to said disk.

Specification at page 8, line 15:

~~The 28th-~~ A yet further aspect of the invention is a marking forming apparatus ~~according to the 25th invention~~, wherein said position information writing means includes digital signature means for applying a digital signature to at least said detected position information or information concerning said position information.

Specification at page 8, line 24:

~~The 29th-~~ A still yet further aspect of the invention is a reproduction apparatus which comprises:

Specification at page 9, line 20:

2025-10-20 10:00:00

~~The 30th~~ One aspect of the invention is a reproduction apparatus according to the ~~29th~~ invention, wherein at least said detected position information or information concerning said position information is written to said disk by position information writing means.

Specification at page 9, line 24:

~~The 31st~~ Another aspect of the invention is a reproduction apparatus according to the ~~30th~~ invention, wherein

Specification at page 10, line 9:

~~The 32nd~~ Still another aspect of the invention is a reproduction apparatus according to the ~~30th~~ invention, wherein:

Specification at page 11, line 8:

~~The 33rd~~ Yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Specification at page 11, line 23:

~~The 34th~~ Still yet another aspect of the invention is a method of manufacturing a disk, which comprises the steps of:

Specification at page 12, line 13:

~~The 35th~~ A further aspect of the invention is a disk wherein a marking is formed by a laser to reflective film of said disk holding data written thereon, at least position information of said marking or information concerning said position information is encrypted or applied a digital signature, at least said encrypted information or digital signature-appended information is converted into a barcode, and said barcode is written by selectively removing said reflective film on said disk on which data is recorded with CLV, all or part of said barcode being written in overwriting fashion to a prescribed region of a pre-pit signal area on said disk.

CLAIMS:

Claims 1-35 are cancelled

Claims 36-37 are newly added.

Fig.3

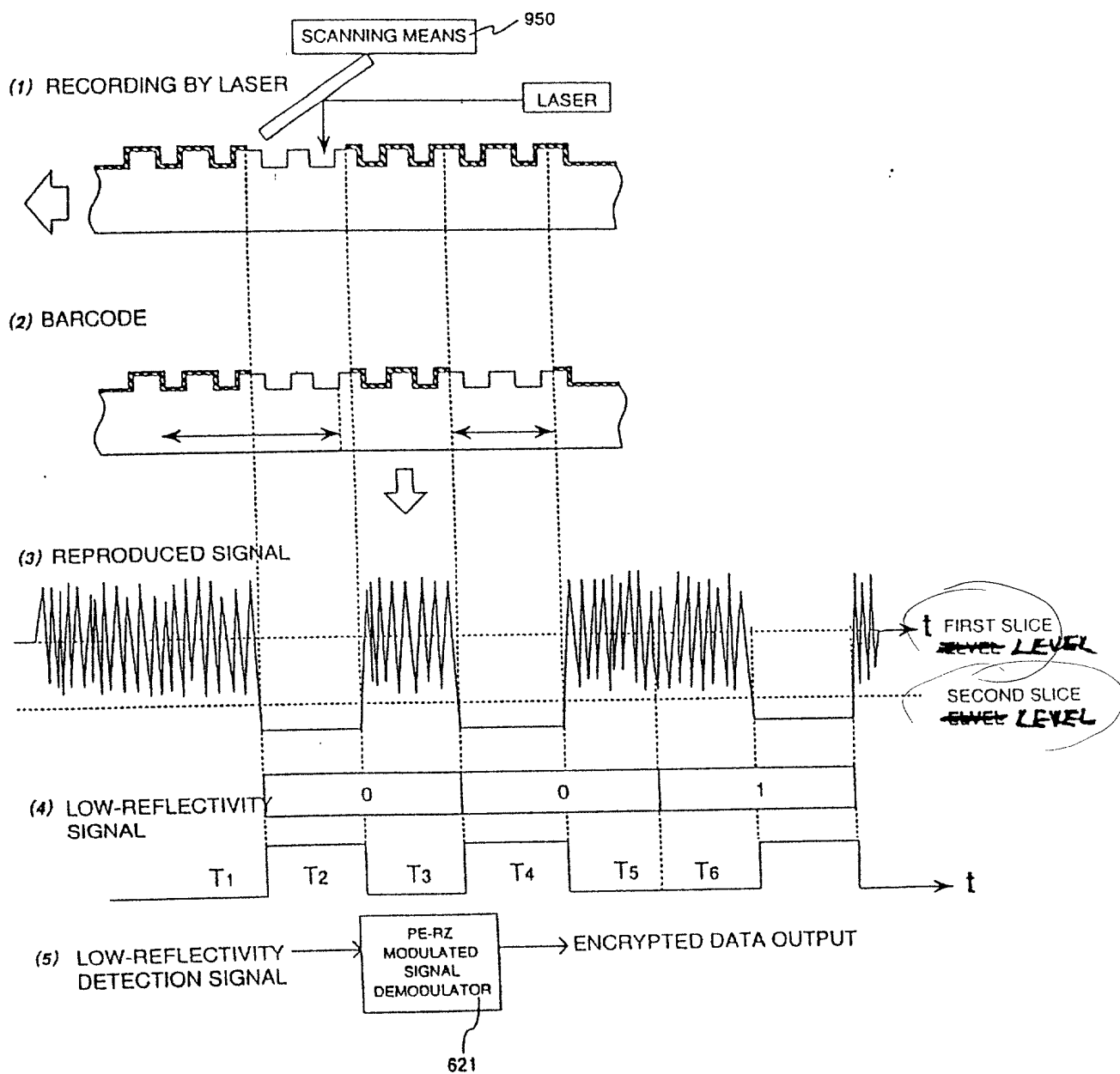


Fig. 6

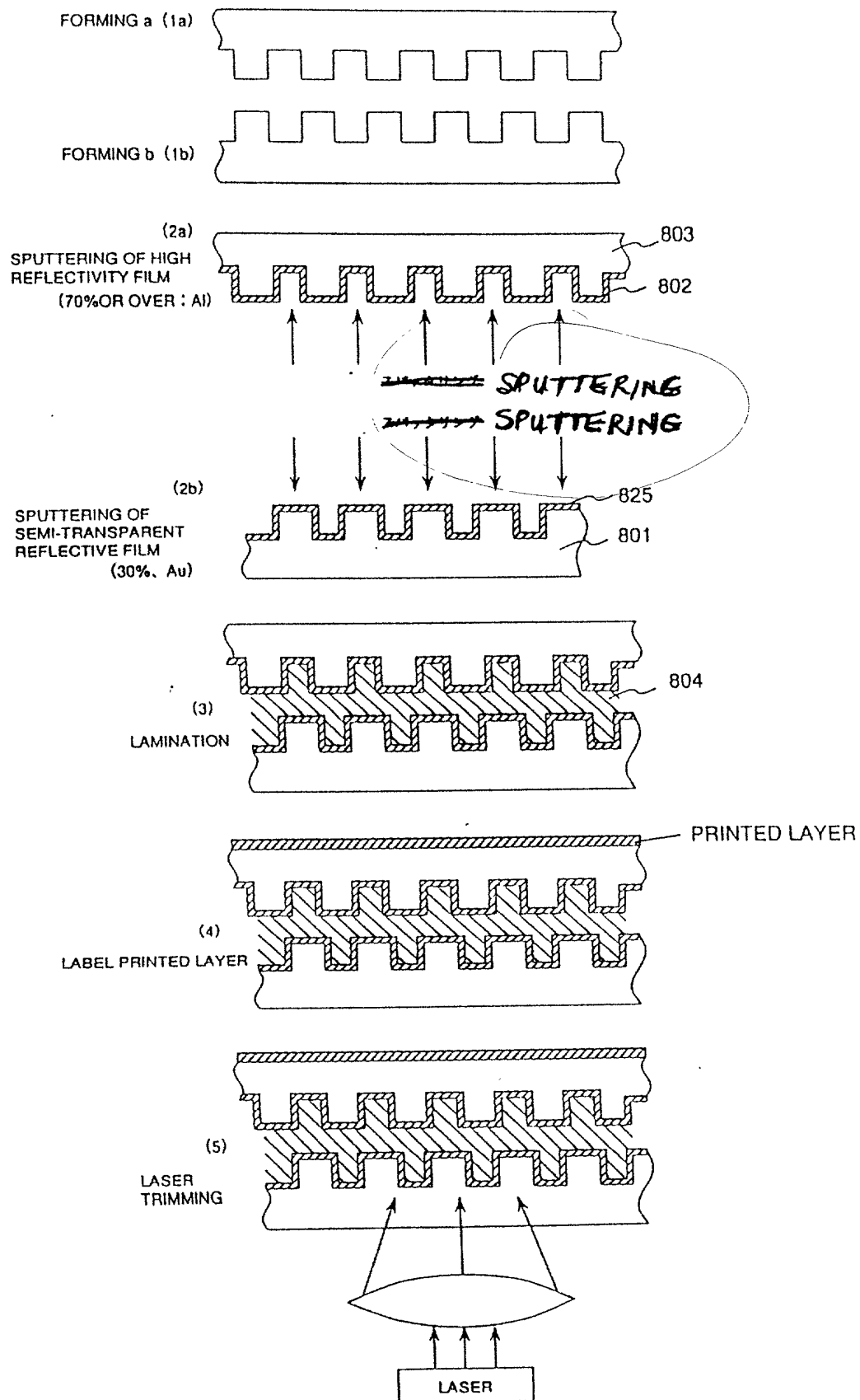


Fig. 7

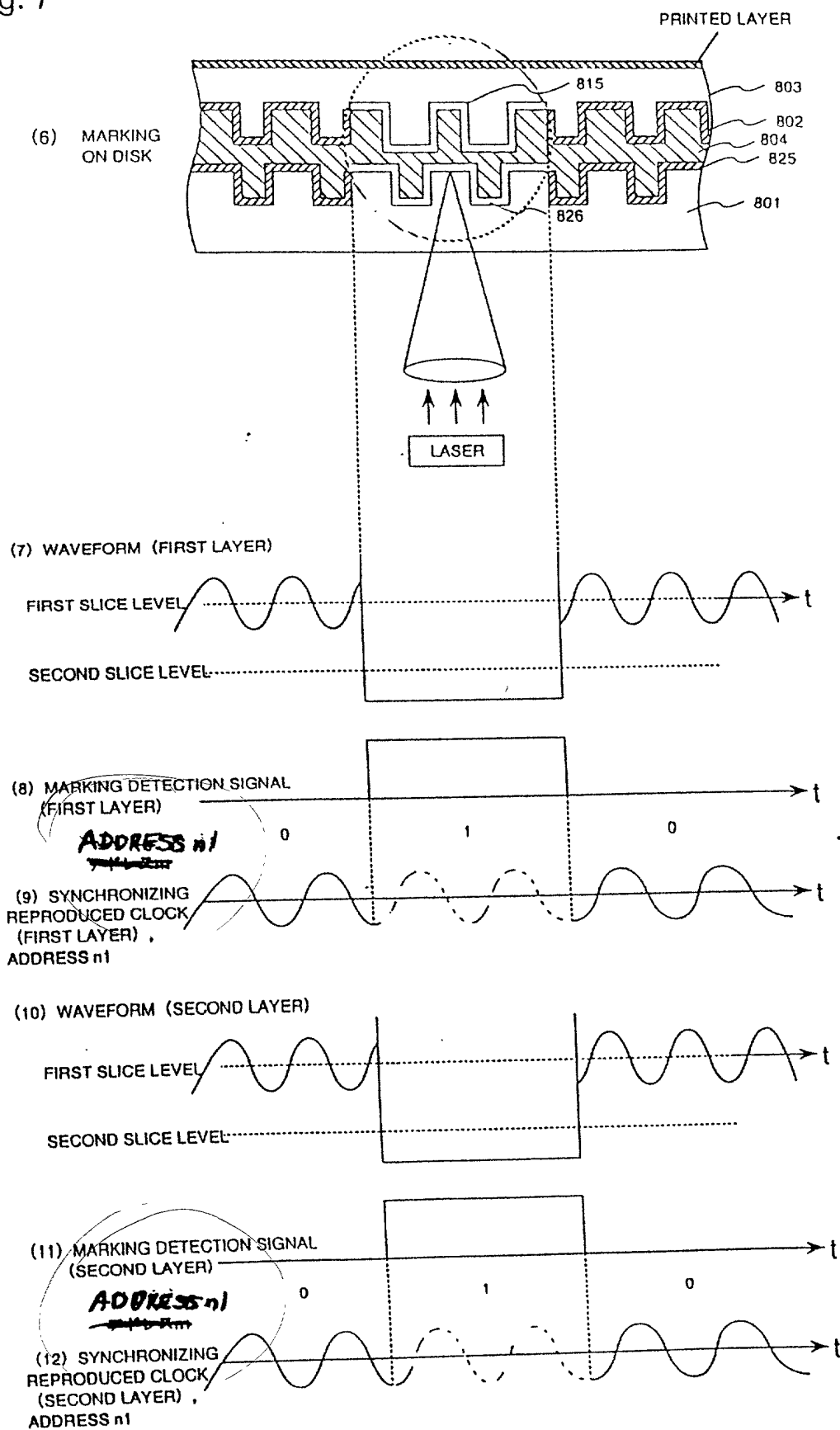


Fig.30

